Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-4 (cancelled)

Claim 5 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end portion, and a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end portion and in a direction away from said proximal end portion towards said distal end portion;

an inlet passage and an outlet passage proximally spaced at least 8 cm and at most 25 cm from said inlet passage,

a valve arrangement for at least restricting outward blood flow via said inlet passage and inward blood flow via said outlet passage;

a connection at said proximal end portion for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter; and

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient.

Claim 6 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end, and a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end and in a direction away from said proximal end towards said distal end portion;

an inlet passage and an outlet passage proximally spaced from said inlet passage and spaced 20 to 40 cm, measured along said catheter, from said proximal end;

a valve arrangement for at least restricting outward blood flow via said inlet passage and inward blood flow via said outlet passage;

a connection at said proximal end for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter; and

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient.

Claim 7 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end portion, and a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end portion and in a direction away from said proximal end portion towards said distal end portion;

a connection at said proximal end portion for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter; and

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient and comprising an inlet passage and a channel extending in longitudinal direction through the catheter, which channel is adapted for providing continuous fully open communication of said displacement structure via said inlet passage for alternatingly displacing fluid in and out via said inlet passage.

Claim 8 (original) A catheter pump according to claim 7, having a length measured from a distal tip to the proximal end of at least 35 cm and at most 50 cm.

Claims 9-10 (cancelled)

Claim 11 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end portion, a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end portion and in a direction away from said proximal end portion towards said distal end portion;

a connection at said proximal end portion for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter; and

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient and having a catheter wall including at least one reinforcement filament and having a thickness of at most 0.5 mm.

Claim 12 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end portion, and a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end and in a direction away from said proximal end towards said distal end portion;

an inlet passage and an outlet passage proximally spaced from said inlet passage;

a valve arrangement for at least restricting outward blood flow via said inlet passage and inward blood flow via said outlet passage;

a connection at said proximal end portion for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter;

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient; and

said valve arrangement including a valve body movable between an inlet position at least restricting flow through said outlet passage and allowing flow through said inlet passage and an outlet position at least restricting flow through said inlet passage and allowing flow through said outlet passage,

further comprising a wall bounding a lumen, wherein

said outlet passage is formed by an opening in said wall; and

said valve body:

- is a plate-shaped member,
- when in said inlet position, extends closely along and inside a projection of said wall in the area of said outlet opening,
- when in said outlet position, extends transversely across a section of said lumen on a distal side of said outlet opening, and
- is pivotable between said inlet position and said outlet position about an axis extending across a central portion of said lumen and centrally located behind said outlet opening.

Claim 13 (original) A catheter pump according to claim 12, wherein

said lumen has a round cross section;

said outlet opening is round in a view frontal thereto and wedge-shaped in a side view perpendicular to said frontal view; and

said plate-shaped member is curved about an axis of curvature transverse to said pivoting axis, round in frontal view and wedge-shaped in a side view perpendicular thereto.

Claim 14 (original) A catheter pump according to claim 13, wherein, in side view, opposite sides of said wedge shapes of said outlet opening and of said valve body extend at an angle of 75–105° to each other.

Claim 15 (original) A catheter pump according to claim 13, wherein, in said inlet position, said valve body has a frontal projected area having a first portion on a proximal side of said pivoting axis and a second portion on a distal side of said pivoting axis, said first portion being larger than said second portion.

Claim 16 (original) A catheter pump according to claim 12, wherein, in said outlet position, said valve body has a frontal projected area having a first portion on a side of said pivoting axis where said outlet opening is located and a second portion on an opposite side of said pivoting axis, said first portion being larger than said second portion.

Claim 17 (original) A catheter pump according to claim 16, wherein said pivoting axis extends across said lumen, and wherein said lumen has a cross-sectional area having a portion on a side of said pivoting axis where said outlet opening is located and a portion on an opposite side of said axis, said portion on said side of said pivoting axis where said opening is located being larger than said portion on said opposite side of said pivoting axis.

Claim 18 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end portion, and a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end and in a direction away from said proximal end towards said distal end portion;

an inlet passage and an outlet passage proximally spaced from said inlet passage;

a valve arrangement for at least restricting outward blood flow via said inlet passage and inward blood flow via said outlet passage;

a connection at said proximal end portion for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter;

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient; and

said valve arrangement including a valve body movable between an inlet position at least restricting flow through said outlet passage and allowing flow through said inlet passage and an outlet position at least restricting flow through said inlet passage and allowing flow through said outlet passage;

further comprising a wall bounding a lumen, wherein

said outlet passage is formed by an opening in said wall; and

said valve body:

- is a plate-shaped member,
- when in said inlet position, extends closely along and inside a projection of said wall in the area of said outlet opening,
- has a deflector projecting into said lumen from a proximal side of said valve body,
- when in said outlet position, extends diagonally across a section of said lumen in the area of said outlet opening,
- is pivotable between said inlet position and said outlet position, and
- is hinged to said wall in an area closely adjacent a distal end portion of said outlet opening.

Claim 19 (previously presented) A catheter pump comprising:

a catheter having a distal end portion and a proximal end portion, and a channel communicating with said distal end portion for alternatingly passing a fluid in a direction away from said distal end portion towards said proximal end portion and in a direction away from said proximal end portion towards said distal end portion;

a connection at said proximal end portion for coupling the catheter to a displacement structure; and

a displacement structure;

said displacement structure communicating with said catheter for alternatingly applying suction for displacing fluid from said catheter to said displacement structure and applying pressure for displacing fluid from said displacement structure to said catheter;

said catheter being dimensioned for positioning said distal end portion in the aorta of a human patient; and

said displacement structure and said catheter being adapted for generating maximum drive pressure in the area of said distal end portion of at least 100 mmHg and at most 500 mmHg.

Claim 20 (previously presented) A catheter pump according to claim 19, wherein said displacement structure is adapted for generating a maximum drive pressure of at least 300 mmHg and at most 600 mmHg.

Claims 21-22 (cancelled)

Claim 23 (previously presented) A method for generating pulsations in the blood flow towards the organs of a patient including:

inserting a catheter into the aorta of a patient and bringing the catheter in a position having a distal end portion in the aorta of the patient; and

alternatingly withdrawing fluid from the aorta and feeding fluid to the aorta via said catheter, such that pressure pulsations are generated in an area of the aorta where the distal end portion of the catheter is located;

wherein said distal end portion is positioned in a portion of the aorta downstream of an area where subclavian arteries connect to the aorta.

Claim 24 (original) A method according to claim 23, wherein said distal end portion is positioned in a portion of the aorta where arteries leading from the aorta to at least one of the abdominal organs connect to the aorta.

Claim 25 (original) A method according to claim 24, wherein said catheter is inserted into the aorta via an artery in the area of the groin.

Claim 26 (canceled)